How to Get a Paper Published in Academic Journals

How to Get a Paper Published in Academic Journals:

The Untold Story

By

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Cambridge Scholars Publishing

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PREFACE

Writing is a serious business. It takes various forms and comes in different flavors. Creative writing involves piecing together an imaginary story, which differs from writing our diary or letters/emails to our friends or family, often described as personal writing. The latter form of writing does not require serious thinking; grammar can be out of place, and you are less likely to be concerned about spelling. Most of the time, readers would be either you or a close friend/family member. On the other hand, academic writing is intended to deliver a key message written in a clear and concise format for a wide range of readers, including other students, teachers, researchers, government personnel, and policymakers. Such a comprehensive range of readership demands your writing to be immaculate and free from logical flaws.

Writing is the only tool we have to communicate with others. For example, you might have found a ground-breaking medicine that could potentially cure carcinogenic cells. There is a greater chance you want this to be useful to the whole world and help everyone in need. Talking about it to your friends and family may not succumb to far-reaching implications. Given limited resources and time, reaching everyone globally and having a personal discussion is impossible, unless we live forever. In addition, there is a potential risk of the drug being unsuitable for some groups of people from different locations. You could have made a severe error, and the drug may do worse than good. The most logical solution to these problems is publishing your work in reputed journals. Typically, journals (in any given area) are incepted by an ample body of researchers working in a particular field. Your paper will be read by some experts to find the merits (and sometimes de-merits) before it is made available for public access.

Over time, how to present your new findings/thoughts has evolved considerably. You might be curious about the subject of your interest and prepare a manuscript that delves into the history and hearsay stories. Consequently, the introduction or background of the manuscript extends to 1000 pages! Such information may be useless or intimidating to other readers, who are essentially interested in the novelty of your finding. In this age of online, including a lengthy spiced up story will merely bother the

readers, who might also be researchers with limited time at their disposal. But before the internet, it had a severe drawback of printing those papers and shipping to other locations. To avoid redundancy, journals have imposed severe restrictions on word length and writing style. It is worth noting that most of the publications in the seventeenth century occurred in the form of letters, which slowly moved to the present format of Introduction, Methodology, Results, and Discussion (IMRAD). IMRAD offers some leverage against time as each section deals with what it says. If we somehow managed to read a letter published about 250 years ago, it would be hard to pinpoint the message, which means one has to read all the lines.

The contents of this book are intended for those new to academic writing plausibly coming under the umbrella of IMRAD, particularly for a journal and book, although doing the latter is frustrating. Needless to say, these are students at their graduate or Ph.D. level and some post-docs (and students in this book refer to all these groups of individuals unless otherwise stated) with no/little publishing experience. It is generally thought that a very experienced and seasonal writer might find a way out, but it is seldom true. With few exceptions, those professional writers put more pressure on amateur writers. This is particularly true in a university setup, which does not distinguish researchers from teachers. More on that later.

This book is divided into several chapters for ease of use, as most books do! Many excellent books have appeared periodically in this otherwise unknown/quiet area. But there is a surge since the 21st century. However, what is different here is that a simple presentation is given to graduate students, or we can call it loosely a guide. But all the books claim to do exactly that. Yet, most of the books on academic writing deal with a lot of literature background, which is essential for very few researchers but upsetting for others. For most of us, understanding the components of writing is more important. There is no easy fix if you are a Ph.D., planning to do a post-doc, and probably want to end up in academia.

Many asked what this book plans to achieve (if and when published). Obviously, this book will stimulate brilliant interest in writing. In addition, this book will ooze out the writing character hidden inside you to make the world full of better writers. If not, this book would serve as a must-read for all university students! Honestly, none of the above. Although mistakes we make in writing for academic journals are unique, there appears to be some typical pattern, an experienced researcher would observe during teaching or editing papers. Instead of fixing the same mistakes repeated by different

students, asking them to refer to a book would be easy. Despite many valuable books – it was impossible to just refer to one book focused on technical writing. For many graduates, Ph.D. students, and early career researchers, formulating a research question to formatting for a journal must be learned in a complex manner. Several courses on academic writing, workshops, seminars, *etc*., teach a narrow range of the process; thus, the knowledge gap still exists. This is one area that deserves significant attention yet remains far from complete. So as many book authors say, I created one to help all.

The goal is to present the information required for writing, specifically to an academic journal in any space. This could be a good starting point for many to develop an individual writing style. Great minds think alike, but no two writers write alike. The choice of words, the length of sentences, the total number of paragraphs, the nature of presenting evidence, the way of deducing reasons, the logic behind inferring ideas, the ability to convince readers, the interpretation of data, the state of reaching a conclusion, and so on, varies significantly between authors. One of the ultimate objectives of this book is to show the clay and water in a proper mix so that you can fit them in your mold (not fungi, but a receptacle) to create any shape or form required.

Most books (on any subject) either use extensive literature or none to negligible, but I have used information from others and acknowledged those people in the end. When writing this, I tried to read them, but they all fall under two baskets. One teaches you how to write sentences, paragraphs, essays, or style of writing, e.g., argumentative or opinionated. The second informs random concepts and brainstorming with many exercises. I do not know which one is prosaic, but I tried to maintain a balance and give you the most crucial information required. For further reading list (which essentially is the references at the end), should help those geeks to find all of them and read every line. If you did that first, there is probably no need for you to read this book. However, since you are a geek, you would read it, anyway!

Happy reading! Happy writing!! Happy publishing!!!

ACKNOWLEDGEMENTS AND DEDICATIONS

I did not want to include such a section in this book, as I could not keep the list concise enough. Yet, I would take this opportunity to thank all those who taught me writing and reviewed my works (very cruel job to edit my terrible writing), and also for those who did not teach me writing or did not review my works, yet greatly associated with me. It would be offensive to include some names and exclude others. Especially, giving names of those who did not help or teach me writing but taught courses on this subject or conducted seminars is certainly ruthless. But special thanks to all those who participated and were involved in the survey presented, and as promised, I will keep them anonymous.

I should dedicate this book to my big family. Their names deserve a separate book! Thank you for finding mistakes in my writing, thinking and everything.

In reality, I dedicate this book to those students who receive no help from their supervisors in writing papers and facing the heat. I hope this book brings some peace.

CHAPTER 1

THINGS THAT ARE NOT IMPORTANT FOR WRITING BUT MUST KNOW BEFORE WRITING

This chapter introduces the realm of publication. Indeed, the word publication is derived from a Latin word that means 'make public'. The goal of any publication is to make knowledge public so that others can utilize and advance the knowledge. Perhaps the most relevant information in this regard is that the word 'science' is also of Latin origin, meaning 'having knowledge'. Before learning to read and write, humankind attempted to transfer knowledge, i.e., made public through drawings, inscriptions, songs, and oral communication. However, with the dawn of the 21st century, writing has become integral to communication. The main aim of this chapter is to synthesize important things required to understand the publication process. This would immensely enrich writing for academic journals.

Reasons to publish

This section clarifies some of the concerns students have about publishing and sets the scene for some refinement.

If you were a student and I had asked why you want to publish an academic paper in a reputed international journal, your answer will be one of the following or something exceptionally similar.

(a) My school needs X number of papers to graduate, and if I do not meet these requirements, I cannot graduate.
(b) My teacher is pushing me to publish.
(c) To get a faculty position, I must publish X number of papers in reputed international journals.
(d) The university I plan to apply for a Ph.D. or post-doc judges my application based on the number of papers I have published.

On the other hand, if I had asked the same question to a professor, what do you think their answer would be?

(a) To get promoted and climb the ladder, perhaps reach the full professor position!
(b) To get more funding.
(c) To establish a strong career and get acknowledged for their contribution by peers.

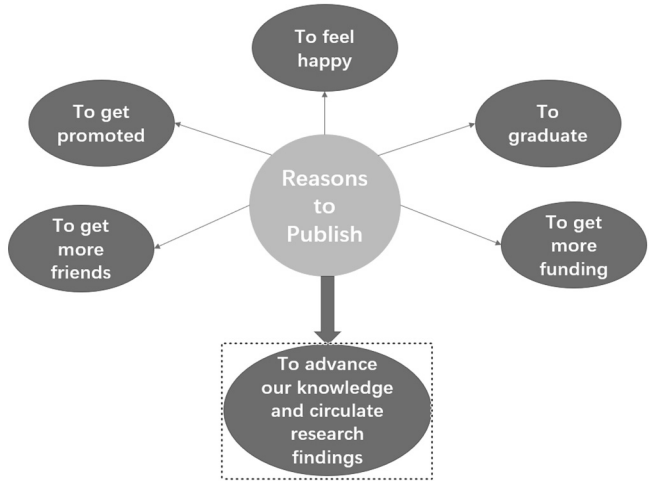

Figure 1.1. Possible reasons for publishing an article. The main goal of publication should be to advance knowledge and circulate important research results to others.

A summary of possible reasons why researchers want to publish an article is given in Figure 1.1. All these answers highlight that we take writing for some personal benefit. Most academic researchers might have heard about 'publish or perish', a concept proposed by Coolidge in 1932, meaning if you do not publish, your career will perish (Coolidge, 1932). Everything in the modern world has some strings attached, and writing your paper is no exception. You might wonder, if not personal, what other benefits writing could offer. Indeed, the benefits of writing your work are much more profound than the simplistic short-sighted view. Writing is the best way to document a finding that could change the world and put it under your belt. To this end, it is interesting to note some examples, actually only one. 'Theory of Evolution' is a remarkable idea that changed how we approach several fields, including medicine, philosophy, and domestication, to name a few. Charles Darwin takes credit for proposing this theory in his famous book 'On the Origin of Species' (Darwin, 1859). However, many people before Darwin embarked on this idea (Corsi, 2005). Nevertheless, we recall

none today and solely credit Darwin, mainly because he was the first to write this and make it available for everyone.

The profoundly saddening truth is that research excites many of us, but writing does not. Numerous students want to be a researcher, thinking they wear lab coats all day and perform experiments in the lab. Alternatively, they get excited about social or literature studies and assume their speech will inspire millions worldwide. The impetus to be a researcher stems from the most known side or at least what is portrayed in the established media. Once, a student mentioned that she was interested in becoming a marine biologist because fish and swimming enthused her. It is bewildering to know how easily our passion, as full adults, could deceive reality. The distinction between wanting to do something and doing something is entirely different. She later figured out that to be accepted as a marine biologist by others, you have to do research, which she was happy with, but writing the results for others put her off. As a researcher, you spend more than 70% of your efforts on writing. You will reach the limelight unless you write and disseminate the findings.

A research paper is written mainly to spread knowledge. In other words, as an author, I get excited with a question and find some answers, and I believe these are interesting to other intellectual readers who crave knowledge. Consequently, we would work together to resolve the question. This understanding resonates that questions and answers are fundamental. Writing keeps the ideas, precisely the questions, and answers, circulating for thousands of years. One could hope if there is no imminent interest in the concept, there will be in the future.

Many fields have diversified ideas scattered all over the place. Some researchers take the painstaking work of bringing order to this chaos. These works become central to the development of humankind and provide a deep understanding of a subject. Academic papers usually fall under two broad categories. In one category, a novel discovery or invention is made. This robust framework probably become the sub-field and drives the science forward. For example, in space exploration research, finding a new galaxy would fall into this category. In contrast, the second category of studies advances these discoveries or inventions to provide more insights. The second category plays a vital role in testing the usefulness of newly invented things. For example, with the invention of the telescope and light wave patterns, we discovered ‘helium’ in the Sun even before finding helium on our planet. Scientific or theoretical ideas will carry a long-lasting impact. In social science and law, they have immediate consequences.

Once published with your name, you take the legacy of that idea even after your demise. Any application or product developed would (in fact, should) have to give deserved credit to you. Perhaps you might have an idea of how to change the atmosphere of Mars so that once we find a way to travel to Mars, we can make it habitable. However, if such an idea remains unpublished, there is no way you could claim that it is your idea. Unfortunately, this has not always been the case. To give one example, Nicholas Tesla first proposed alternating current (A.C.), which conflicted with his rival, Thomas Edison, who believed direct current (D.C.) was the future. The story of Tesla sadly ended when he gave the patent and rights to his friend, who used it probably unwisely. The dark ages of such scenarios have bygone, and now writing is arguably the most logical form to disseminate your ground-breaking ideas. It must be mentioned that not all the ideas or thoughts one proposes may have imminent applications. Such a prospect may occur after 5 or 500 years. Thus, writing is akin to preserving your thinking.

Alleviating fear about language

It is vital to realize that writing is a daunting task. Everyone struggles to produce the perfect manuscript. However, the more experienced researchers brawl less now because they had undergone many struggles as everyone when they had started writing. Our first lessons in school were a struggle too, but now we mastered it, and it looks naïve. The pace at which writing can be mastered varies between individuals. There are interesting studies on this subject, but the consensus is that anyone can learn and master writing, provided enough time is invested in reading and writing. An important factor contributing to perfect writing is reading papers or books from someone who has become experienced. The writing style changes every 25-50 years in all languages, and after a few hundred to a thousand years, it may look like a completely different language. For example, traditional Chinese characters are replaced with simplified characters, and only a handful of Chinese people can read traditional characters. Similarly, the works of Shakespeare require a unique dictionary and explanation (often written as a separate book) by language experts to comprehend.

English is just a language, similar to thousands of languages humans use to communicate. Due to the school systems and grading, it is portrayed that knowing, remembering, and memorizing ‘English words’ reflects your knowledge. This prevents many authors (including English speakers) from writing a paper in English. Knowing English will help you write manuscripts,

but it is not the only requirement. If this is enough, why not everyone in countries where people speak English can write papers? The same applies to people in China or Spain. Not everyone who can speak Chinese or Spanish can write papers in their respective languages.

As far as language is concerned, we humans learn new words to understand things. New words are born in all languages every day. This happens a lot when a new discovery is made. For instance, there would not have been a word called 'computer' two centuries ago. Of course, then, there is the distinction between spoken and written languages. The rules of how a language works are still taught in school. Many people still cannot score full in their mother tongue, yet they use this language every day. There is no way one person can know all the words in any language. For example, a physics researcher may not know the meaning of 'ploidy', and a climate change researcher may not know the meaning of 'tachyons'. Necessity pushes us to learn new words required to describe things, in our research area.

However, basic grammar and sentence constructions are essential to writing information correctly. In academic writing, more emphasis is placed on doing it without mistakes. In a school or university setting, if you are correct by 50 or 60%, they assume it is enough. With 50% incorrect understanding, we eventually reached a Ph.D. It is impossible to fix all the lacuna accumulated over the years in a few years of Ph.D. Yet, the harsh reality is people reading your paper is always a geek. Consequently, there is no escape, but we must learn. It is also interesting to recognize that the words we read in any paper were once 'alien' to the authors who wrote those, but it has become customary for those researchers to use them in the paper. Ideally, this is in sight for us. Thus, fear of writing or language would not make you a better writer; conversely, it does the opposite.

Translating the text from some language (e.g., Chinese or Spanish) to English

Most of us think writing a paper in another language and translating it into English or vice versa would be a competent approach, especially if you are writing for the first time. However, you cannot continue to do this if your goal is to research and publish more papers. In contrast, the translation tactic would have been handy if you were writing an English classroom essay on a broader topic. It is not the correct method, but you are reporting this for one person to read, i.e., your teacher. The chances of your teacher looking

for your paper to read and understand everything after five years is trivial. In contrast, a journal article, once published, will be out for others to read even after 100s of years. Thus, our goal is not translating thoughts from a language to another, but to create and disseminate knowledge. One of the fundamental problems is that many still consider papers as a job to do, similar to office work. This certainly is not the case.

Table 1.1. Examples of new words and their meaning. The readers can modify this model. Geeks are wondering how these words can be new!

New word	Synonym	Synonyms in your language	Notes
Neonatal	Newly born		Babies from birth to 4 weeks. This word can be used for all mammal's offspring but not for other forms of animals, e.g., vertebrates
Tachyon	Imaginary particles travel faster than light		Primarily used in physics.
Oneirology	Brach of science attempting to study dreams		Greek origin: Oneiron- dreams. It includes only scientific study, not personal observation.
Reliant	Dependent on something/factor		Commonly used in social science
Conceptual	Theoretical		Used to represent a theoretical prediction of some theory
epistemology	Intellectual/Scholar/ Knowledgeable/ learned		The theory of knowledge, especially about its methods, validity, and scope. Distinguish belief from facts

Given the pressure of the university setup requiring the students to have 2 or 3 publications in international peer-reviewed journals for graduation, many are forced to write the paper in their language and use software to translate. This translated text is passed to their supervisor or teacher, who reads it (sometimes after retranslating into their language, oftentimes the same language used by the student to write the text) and finds that it meets the required standard. Nonetheless, any objective errors go unnoticed in this process. Perhaps, we might realize this when we take a published paper and translate it into a different language. A few years ago, a student working on an academic publication took five articles published in Science and Nature, translated them to Chinese, and sent them to several professors working with her supervisor. She claimed these papers were for conference proceedings, and a review would help decide whether to accept or reject them. Of the 21 reviews received, eight recommended rejection, mainly attributing their reason to lack of clarity, poor writing, and unclear description of data.

Knowing the words in English (or any other language you intend to write) and using them appropriately in your writing takes time. So, the earlier you start doing this, the better you will become. It is good to find a simple meaning for the academic terms in English and your language. However, you may not need simple meanings over time, and you would know when and where to use the complex or more appropriate words. This comes with more practice, and the best teacher is yourself. Table 1.1. shows a model of how you can do it.

Who should be on the author list?

Given that those who write first take the credit, the fundamental question is who should be on the author list? Since millennia, it has been rare for people to publish their work alone. A survey of some top journals indicates only 3-5% of the papers are published with sole authors. Such forms also include invited papers, typically written as a viewpoint of some subject matter. This starkly contrasts with 18th and 19th-century publications, where only 3-5% of the papers had multi-authors. But why has the trend changed from single to multi-authors? The main reason is the extensive data required to be published in reputed journals. This means complex writing and statistical analysis, and sole authors may not have the liberty of time and expertise to carry out all the tasks to bring a manuscript to publication standards. In particular, papers published in physics sometimes include hundreds, if not thousands, of authors. For example, I know the most extended author list is a paper with 5,154 authors (Castelvecchi, 2015). The curious thing is that of

the 33 published pages; the first 24 pages are devoted to the author's name and institute information. It is impossible to know each author's role in that paper, but we believe all the authors had read and replied to the lead author before submission. It stands somewhat odd to know and remember 5000+ individuals, assign tasks, get the job done, and publish a paper. This, in itself, requires a paper to decipher their working style, contribution, *etc*. Perhaps this would be equally useful for everyone as the original published research.

Several journals require an author's contribution statement, wherein you have to dissect and inform what each author has done. However, these checkpoints may not control the regulations set by institutes. It is hard for the early career researcher to decide whether a senior researcher or a teacher has met the criteria set by journals for authorship. Sometimes, you want to include people working in your lab or institute in the author list. Therefore, in retrospect, they would include your name if and when writing their papers, and you contributed extensively. The benefit would be that when you prepare your CV, it will look like you have published many articles.

There are situations with students whose teachers would do little-if any- and demand to be the corresponding or first author. In some countries, corresponding authors (the author who communicates with the journal and oversees the submission process) are recognized equally as first authors. Therefore, regardless of whether they worked on and submitted the paper, teachers want to take up this role. This situation is highly embarrassing and analogous to robbing someone's money. In terms of publication, it is brain theft. A survey involving 282 early career researchers from different countries run by one of my students found that 26% of the teachers (supervising Ph.D. students) have no experience writing a paper for an international journal. However, to graduate, the school demands students publish at least 2 papers in international journals, often in English. This is equivalent to asking a Spanish teacher to teach Arabic. Undoubtedly, it could turn out to be an overwhelming task. However, as graduate students and PhDs need a recommendation letter from supervisors and teachers at the institute where they previously worked, leaving teachers out is impossible, even if they did nothing. Such circumstances arise because the teachers are mainly overcommitted to other work, and your paper becomes the last priority if they wish to help. Further, the teachers do not want to tell you they cannot help you. Imagine your teacher having no publication in an international journal; how effectively can they contribute to the writing and organization of the manuscript?

Authorships are not customarily given but earned. However, it must be noted that all the authors in the work take responsibility regardless of the order in which they appear in the paper. Authors listed as fifth in the list bear the same criticism when the paper is erroneous. Anything said or done in the paper if proven to be incorrect or untrue; there is a great chance it reflects on all authors. Therefore, it is better not to add your childhood friend, who bought chocolate for you every day, or the person you just met on a trip because they offered a free drink.

Given all authors take responsibility, it is best to include only those who have contributed significantly to the paper in the author list. How much contribution is considered significant? Many guidelines are available for this. It is in our best interest to look at them before surmising our understanding. By combining most of the approaches available in versatile fields, we can conjecture that all the authors of a paper must undertake at least two of the following tasks (approving the final version of the paper is a mandatory task): (1) conceptualize the research question, design experiments, analyze or interpret data; and (2) create figures and table, draft and/or revise the manuscript, and importantly approved the final version of the paper. These are not mutually exclusive, meaning doing either one of the tasks does not make it sufficient to be a co-author. Their contribution must be significant to be included as an author in a paper. Without the person, the paper would be completely different. Sometimes, people want to include famous researchers in their work so that the paper can be published quickly. Technically, this is 'guest authorship,' which should be avoided altogether, but it has recently been rising.

In the literature on authorship, new terms keep cropping up. Therefore, it is essential to have some definition. One of the two things would happen. An author would contribute extensively but does not want their name to be included in the author list, or the lead author ignores them intentionally. This is better referred to as 'ghost authorship'. In contrast, an author would contribute little but demand their name be included in the author list, or the lead author would include them purposely. Such forms of authorship are called 'guest or gift or honorary authorship'. These terms are sometimes used interchangeably. Because both are unacceptable and unethical, they should be avoided regardless of the 'terms'. It must be noted that some early publications referred (and continue to do so) to the guest, gift, honorary, and ghost authorship as 'ghost authorship'.

There are some well-established (unwritten) rules about authorship, and knowing them is necessary. The author whose name appears first in the list,

usually known as ‘first author or lead author’, did most of the work for that paper, from conceptualization of the idea to execution, experimentation, data analysis, writing the manuscript, and editing. However, this ‘first or the lead author’ does not necessarily have to be the one who corresponds with the journal during submission up until publication. This role is left for the ‘corresponding author’, primarily the senior author, perhaps your teacher or supervisor. Nonetheless, the lead author can also be the corresponding author, mainly in cases where all the authors are well-experienced. But not necessarily always! Other authors, often described as ‘second, third, fourth author’ or more depending on the number of authors involved, are mostly referred to as ‘co-authors’. The list their names appear should correspond with the level of their contribution. For example, a co-author who analyzed data performed experiments, and the written manuscript should be given more weightage than the author who just analyzed data. Surprisingly, acquiring funding alone can contribute to authorship, provided the author has invested time to raise money for that particular study. There is no consensus on whether funding acquisition can be qualified for being an author in a paper. However, all the authors must read the manuscript before submission. Ostensibly, this message has never reached/reaches many authors.

It is essential to know who would be on the author list before the complete study is executed. In many cases, involving authors at the last minute averted their involvement during the development of the project. For those authors, it also creates problems understanding the logic and reasons behind choosing methods. Furthermore, at the early stages of the paper, devising tasks for each author is also essential, and this role hinges on the lead author. Alternatively, the ‘corresponding author’ may be better suited due to their experience. As redundant as it may seem, the lead author should do planning the workflow, organize deadlines, and, importantly, communicate with all the authors. Further, the lead author must give ample time for the other authors to work. Besides teaching, chasing funding, and markings, several papers are piled up for reading, revision, or editing for your teacher. Thus, you cannot expect someone to read your paper right away.

Dance (2012) stressed that what constitutes an author varies between fields or sub-fields. Multi-authored publications with hundreds or thousands of individuals are primarily found in physics or sub-fields, e.g., particle science and atomic science, because of the workforce required to maintain large-sized equipment, complex data analysis, and long-duration required for completion of experiments. Everyone working on that project is listed as an author. The order after the first and second author would not matter much.

However, in biological and medical sciences, the order of the authors reflects their contribution. This means the fourth author has done more work than the fifth author. In social science, there is a mixed approach. As far as computer science is concerned, there is some consensus to list the authors alphabetically. Therefore, the disputes arising for authorships also vary between fields. For example, medical science research would find it unethical to have thousands of authors in a physics letter, and an atomic physicist would find it amusing that biologists argue for the second author's position.

Authorships are the tickets to be successful with faculty positions, funding, and even having talented students. Supposing you were a Ph.D. student and looking forward to a career in academia, then your goal would be to end up with a professor whose lab publishes more papers. Consequently, even if you published a few papers during your Ph.D., you would be recognized as someone with 100 papers working with a professor whose lab collectively is not so famous. Such competitions or fights are unnecessary or even unethical but will continue until discrimination exists during funding and student recruitment. This is mainly because, without funding, the labs or institutes perish. Therefore, change is needed from the top to the bottom.

Single and multi-author(s) – does it matter?

There is a range of benefits for single authors. Firstly, you take the most credit for the knowledge. Secondly, it is easy to convince funding bodies, university committees, or companies that you can conduct research and write papers in international peer-reviewed journals. Thirdly, perhaps the most critical benefit is no disputes with co-authors. Fourthly, you can determine the pace of your work. For the sake of brevity, hundreds of other benefits are not listed. However, the funding body or university committee may view it differently. If you have published ten papers, all without any co-authors, this indirectly tells them that you are not willing to work as a team. Most universities and funding bodies require you to demonstrate collaboration with international authors. An individual with few multi-authored papers from international collaborations stands at a better place than one with more single-authored papers. Therefore, maintaining this balance is essential in academia, notwithstanding the fact that collaborations are challenging, especially for early-career researchers.

Understanding journal working style

Journals require you to submit manuscripts, not papers or drafts. A manuscript is an unpublished work, whereas papers are already published. They could be in some journals, book chapters, compendiums, conferences, and meetings, which can be accessed if a reader wants to read those. Disentangling these terms are critical, and it solves many issues. Academic journals often include researchers and non-research technical people to ensure smooth workflow. All journals would have one (or more) editor-in-chief (EIC). S/he/they is/are responsible for overseeing all the actions, and only they can make logistic changes to the journal (Figure 1.2). This may include adding a new format of papers, e.g., opinion papers. The journal, until this point, had never published an opinion article, and the EIC thought it could boost the journal's readership. Then they meet with other researchers, more appropriately called associate editors or assistant editors, involved with the journal and write something called an 'editorial' to include those amendments. Thus editor-in-chief is similar to the CEO of the company. The next person in the hierarchy is the subject editor or handling editor, or associate editor (A.E.); both names are used, depending on the journal. These researchers have some expertise in a particular area, and they are like the managers of a company. They report directly to the editor-in-chief.

For understanding, we would use coffee-related ideas and academic performance. This book will likely demonstrate the intricacies of writing a scientific paper using coffee drinking and academic performance as an example. Now, we create a journal for the purpose of this book to see what is happening behind the scenes in most journals. Our journal publishes research on 'Coffee'; therefore, it is named 'Coffee Research'. It includes a wide range of research topics pertaining to coffee, including the taste of coffee, its composition, and its health benefits. The editor-in-chief is Prof. Marrie Newtonn. She has expertise in all these areas but cannot oversee thousands if not millions, of papers authors would submit. Therefore, there are three associate editors, and each one of them has specific expertise. Prof. Charless Eiinstein handles submissions dealing with the taste of coffee, Prof. Issacc Hawkinss handles submissions related to the composition of coffee, and Prof. Albert Darwiin is interested in the health benefits of coffee. When you submit your work, it will be directed to the editor-in-chief, who will forward the paper to one of the associate editors depending on which area your paper falls.

For this example, the paper you have submitted dealt with health benefits. Then Prof. Albert Darwiin receives the paper and sees if it has merits. If he decides your study is valuable and important for others to know these results, he will ask two or three other researchers for their opinion. These people are called reviewers and selected by the associate or handling editor. When these reviewers (usually 2, but rarely up to 5 or more) finish reading your manuscript, they will have their opinions sent to the associate or handling editor, who will decide what to do with the paper. This will be forwarded to the editor-in-chief, who will contact you regarding the outcome. The outcome of the paper will vary, and we will delay discussion on this topic until chapter 8.

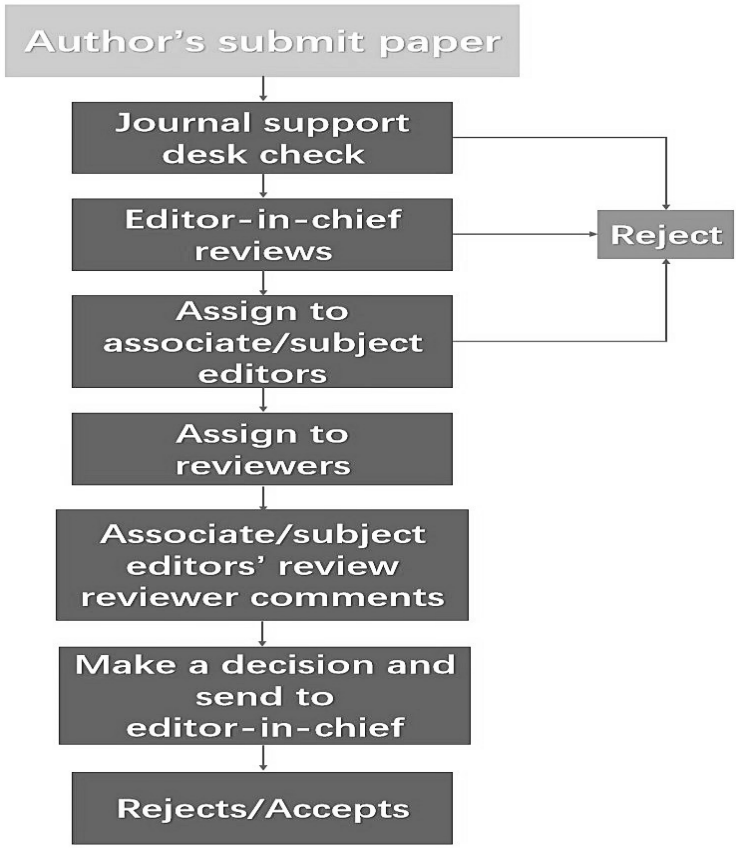

Figure 1.2. The general workflow of most international peer-reviewed journals.

Indeed, the practice of appointing peer-reviewers (who are essentially your peer but give an opinion about the study) originated in 1665 with Heinrich Oldenburg (Lockwood, 2020). It is better to approach peer review as a process of critiques from experienced researchers to make your work more impactful. However, their role is also to spot fallacies and prevent papers with incorrect data from being published. This would drive the subject in a wrong direction with resources wasted before true results emerge after a decade or so! In a strict sense, peer review clears up space for only quality papers to get published in that journal.

In this process, some editorial assistants would oversee if the manuscript you submitted meets the standards set by the journals. As editors are not paid, their time is put to best use. For instance, the journal mentioned more than 10,000 words, including all the sections, will not be considered. If your paper had 140,389 words, either because you are a nerd or just struggle to write and reach 13,800 words, the editorial assistant would write to you asking for trimming.

Our 'Coffee Research' only publishes research papers. Editor-in-chief thinks including review papers would help the journal grow with IF and readership. Typically, after consulting with the associate editors and a few others, the editor-in-chief will publish an editorial informing the changes and asking readers to consider submitting such articles. In this editorial, the editor-in-chief details how it will be published, the format required for submission, *etc*. Most of the journals we have today would have done something like this at different times.

Understanding journal metrics

Understanding Science Citation Index (SCI) or Social Science Citation Index (SSCI*)*

There are thousands of journals out there, and I'm exaggerating slightly. There could be millions of journals; if you count university-published journals, each department has one. Some predatory journals are not even peer-reviewed, meaning they publish anything and everything as long as you pay a fee. To make some sense of this publication model, journals are indexed by a company called 'Thompson Reuters' (but at the time of writing this, some people claimed that Clarivate, the same company that owns Endnote, now owns this indexing system, but that doesn't affect us). If not, we can claim 'Coffee Research' is also a legitimate journal; everyone should read it and submit manuscripts for us to publish. Consequently, some

regulations are needed. In short, Thompson Reuters identify peer-reviewed journals with legitimate citation numbers, and the papers published in these journals are helpful to the research community. The journals in the area of science are included in Science Citation Index (SCI), journals in social sciences are included in Social Sciences Citation Index (SSCI), and journals in arts and humanities are put together under the Arts and Humanities Citation Index (A&HCI). Those indexed journals are available in a giant database called the Web of Science (WoS). The database also gives each journal an impact factor based on citations received in the past two years (see below).

The list of journals on WoS database continues to grow every year. Currently, it includes approximately 10,000 journals in some 185 categories. A published paper indexed in WoS would eventually have a WoS number to verify the authenticity of the paper and journal. In some instances, there are two journals with similar, rarely identical names with the addition of 'The' or any other word. Authors sometimes get confused, and predatory journals aim to lure you towards submission in those journals. The WoS number would determine whether your paper has been published in the quality journal for your school during graduation or application for an academic position.

One crucial change the SCI database has undergone recently is the release of the Science Citation Index Expanded (SCIE). It is similar to the SCI database but with more journals from various fields, particularly engineering literature. Nonetheless, some universities or research institutes still want the authors to publish their papers in SCI journals to appreciate the full benefits. This requirement puts the Ph.D. students sometimes at risk, as their graduation and further plans depend primarily on that one paper.

Understanding Impact Factor (IF)

Impact Factor (IF) is an excellent proxy that indicates the journal's quality. Dr. Eugene Garfield first came up with the idea of measuring the strength of the journal with an impact factor in 1955 (Garfield, 2006). By calculating the number of papers and reviews published by a journal in the past two years and comparing it with the number of citations that the journal received in the past two years, we can derive IF. The citation refers to referencing, but it must be in international journals. Thus, including a paper you wrote for a class assignment would not be considered a citation, as it was not peer-reviewed. So is citing a letter you write to a friend. It would have made life

easier to boost IF, as everyone would write letters to their friends and cite them.

$$Impact\ factor\ (IF) = \frac{number\ of\ citations\ in\ the\ previous\ 2\ years}{number\ of\ articles\ in\ the\ same\ 2\ years}$$

If a journal published 50 articles in the past two years and cited by 50 other papers, then the impact factor would be 1. The citation could be from the papers published in the same journal. Therefore, sometimes journals ask you to cite their papers to boost IF. Essentially, we are helping the journal.

A rigorous long-standing debate is whether IF is a good measure to judge the journal's quality. Firstly, the journals publishing long reviews are more likely to receive numerous citations and have bulky IF. In addition, clinical medicine journals which use the data to suggest a drug or a novel treatment would have far too many citations. Thus, it is unsurprising to note that Cancer Research Journal for Clinicians (C.A.), a bimonthly journal, has an IF above 500! Secondly, journals publishing multidisciplinary research would have more citations due to their widespread interest. Consequently, journals like 'Nature' and 'Science' have high IF. It is redundant to compare the IF of these journals with a niche journal that publishes only research on very narrow topics, for example, 'Mediterranean Journal of Mathematics', which only publishes mathematics-related papers invariably from the Mediterranean region. The papers published in these niche journals will likely be cited only in a few other journals; thus, there is no bolstered IF. These journals are more vulnerable, and perhaps the research area will also go extinct. Thus, it is good to use IF as a measure to judge the quality of a journal, but not an explicit indicator.

Journal publication has reached an era in which a paper in Nature of Science is mandatory regardless of your research area. Some authors try to submit all their works to these journals, knowing the papers would end up elsewhere beforehand. This practice raises the total number of submissions received by some journals. The strategy for those authors is to move down the journals based on IF until one journal sends it for review and then eventually accepts the work. Whether this should be a common practice for all authors is debatable, but as we will learn, knowing a few journals before writing the paper is pivotal. Thus, the target journals (perhaps up to 5) must be in sight before completing the paper.

IF of a journal often fluctuates, but a good journal should show an upward trend. A significant increase in the IF for one or two years does not reflect